

## ABSTRACT

According to the invention, hardware assisted dynamic optimization of program execution is disclosed. According to one embodiment, an application process executed by a microprocessor is optimized by selecting one or more microarchitecture events relating to the execution of the application process to be monitored by one or more hardware monitors; establishing parameters regarding the monitoring of the microarchitecture events by setting one or more monitor control vectors; processing profile data captured by the hardware monitors regarding the occurrence of the microarchitecture events; identifying a region of interest in the application process for optimization based at least in part on the captured profile data; and optimizing the region of interest in the application process.

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